

ABSTRACT OF THE DISCLOSURE

A zero-voltage-switched, full-bridge, phase-shifted DC-DC converter for use in a DC power supply or battery charger includes a power transformer, four switching transistors connected to form a full bridge, and a decoupling capacitor and resonant inductor connected in series to the primary winding of the power transformer. At high loads, i.e., high output voltages, the resonant inductor charges the stray and internal capacitance of the switching transistors. Under light loads or in a no-load condition, with the current through the resonant inductor insufficient to allow the inductor to recharge these capacitances, the combination of a second inductor connected at one end to the central tap of the power transformer's primary winding and at its second opposed end to the middle point of a capacitive voltage divider, permits the second inductor to store enough energy to effectively recharge the stray and internal capacitance of the switching transistors for improved operating efficiency.